March 1986

The Naval Aviation Safety Review

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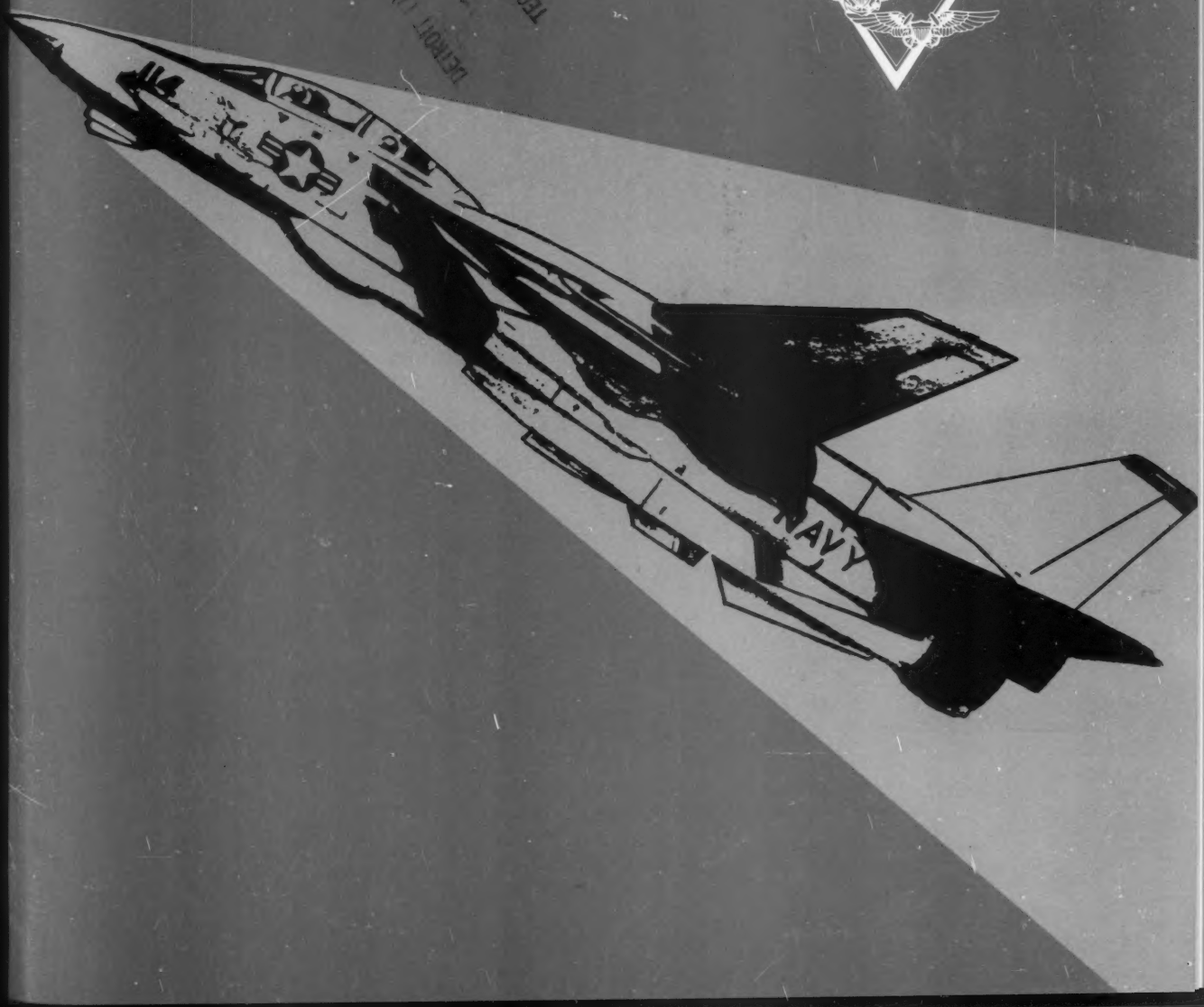

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Cover painting of an F-14 Tomcat in a steep climb by Approach artist Blake Rader.

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Secretary of the Navy John Lehman (right), poses with Mr. Paul Warner, sponsor of the Grampaw Pettibone Trophy, during the first presentation of the award in January.

First Presentation of the Grampaw Pettibone Trophy Honors Excellence in Safety Communications

In 1984, VAdm. "Dutch" Schoultz, then Deputy of Naval Operations (Air Warfare), received a proposal from Mr. Paul Warner, son of the late Capt. Hubert "Seth" Warner, creator of that crusty old sage of aviation safety, Grampaw Pettibone. Mr. Warner's idea was an award honoring excellence in naval aviation safety communications, perpetuating the memory of Capt. Warner, who died in 1976, and helping to foster the ideals for which his creation has stood for over 40 years.

The idea was enthusiastically received and an appropriate trophy was graciously commissioned by Mr. Paul Warner in the likeness of Grampaw Pettibone himself.

On January 15, 1986, Attack Squadron 27 became the first recipient of the Grampaw Pettibone Trophy. Secretary of the Navy John Lehman made the presentation in ceremonies in Washington, D.C. The Lemoore-based A-7 squadron was selected as a result of its intensive writing program which has seen its articles appear in many Navy publications including, of course, *Approach*. Although the program met with initial resistance in the squadron, the continued success was assured as members saw their articles printed. By writing these articles, squadron members share their thoughts and ideas with the entire community. This idea of sharing is a key element in keeping naval aviation safe.

We at the Naval Safety Center wholeheartedly endorse this program and invite the rest of our readers to participate. Don't keep it to yourself. Share your ideas and experience with the rest of the Fleet.

Approach and the Naval Safety Center are fortunate in having support from the highest levels of the Navy and that support comes from years of work and production of a recognized publication that contributes directly to safety. In a larger sense, though, the product is only as good as what goes in, and that's where your continuing help is so necessary. So, whether you want to try for the Grampaw Pettibone Trophy, or just have something to say, send us that story you've been contemplating.

"I know you wouldn't want to lose anyone on this cru

this cruise. And especially I don't want to die myself."

A Letter to the Captain

By LCdr. Paul Miller

25 May 198X

Sir,

I would like you to please check the safe usage of your aircraft elevators and the people in charge of them. I'm referring to an incident that just occurred no more than an hour ago. It almost cost me my life.

I was up in a balcony rigging up a cheater line we use for our 9A station. I had to hang over the side a little in order to put the line through a block. Without any warning elevator No. 2 was dropped. If not for the help of BM3 Thompson that elevator would have taken my head off.

This line is necessary for the rig and there is but one way to rig it. They gave plenty of warning while the elevator went back up. How come they couldn't give warning about it coming down?

I know you wouldn't want to lose anyone on this cruise. And especially I don't want to die myself. Please have something done so nothing like this ever happens again. I don't mind saying, sir, "It scared the hell out of me."

V/R
BM3 Richards
1st Division

Air Department
USS Large Deck (CV 6X)

From: Hangar Deck Officer
To: Air Officer

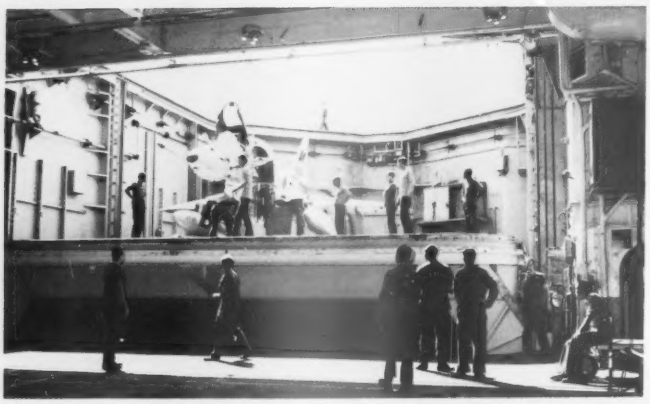
Subj: Investigation on the case of BM3 Richards' letter to the Captain, dated May 25, 198X

1. I received the subject letter May 27, 198X. Due to the potential for tragedy as outlined by Petty Officer Richards, I decided to investigate the circumstances to provide you and the CO with some idea as to the events which led up to this incident.

2. Having obtained statements from as many people as I could and having interviewed each one of them, I pieced together the following chain of events. In hindsight the errors stand out easily. Through this investigation, it is hoped in the future that the early detection of the potential tragic chain of events may be more easily recognized and broken.

Event 1. Early May, the warning horn for aircraft elevator No. 2 fails electrically. The equipment operator for the elevator notices the failure and calls "A" (Auxiliaries) Division Pump Room One. The call

"Supervision is the key to success in all naval operations... With this key there is nothing this great ship cannot do."



isn't logged and neither the supervisor in "A" Division nor the electrical repair desk at Damage Control Central are told. The equipment operator does not notify the division supervisor.

Event 2. Hangar Deck Division (V-3) Daily Status Report — The status of all the equipment on the hangar deck is reported daily by the hangar deck supervisor to the aircraft handling officer (ACHO). The hangar deck supervisor reports that the elevator 2 status is up.

Event 3. Several weeks go by. Electrical ("E") Division is notified by "A" Division and V-3 Division of numerous other electrical gripes. A review of the "E" Division logbook reveals over a dozen trouble calls made by V-3 personnel. Several gripes include elevator electrical problems. "E" Division supervisor personnel become aware of the horn being inoperative. A later interview with the "E" Division officer uncovers the fact that his personnel were aware of the horn malfunction but were not able to fix it because the replacement parts were not in stock. There is no written log entry of this discrepancy in the Electrical Trouble Desk Log.

Event 4. Again, days go by. Exactly why the warning horn problem is allowed to persist is never clear. Exactly why the V-3 Division Officer, the "A" Division Officer, the "E" Division Officer, the Aircraft Handling Officer, the Air Officer or the Captain are not advised of the warning horn being inoperative is not clear.

Event 5. May 25, evening. The scene, Hangar Bay One. Feverish activity is underway. Flight ops are finishing. Elevator traffic is light. Deck department personnel are preparing to conduct an alongside underway replenishment operation (unrep) with the USS Bounty Maker. BM3 Richards of the First Division is in the hangar deck in the elevator 2 well preparing to rig for the unrep. He is supervising two deck department personnel on the forward O-1 level mezzanine deck, adjacent to the elevator well. Deck department personnel often work in the elevator well, rigging cables, pulleys, blocks, tackle and lines. They often work in dangerous places but are normally safe and they are normally supervised.

This night the crowd in front of the elevator 2 is large. Officers and chiefs from deck department are on the scene. The sliding padeye is down; rigging is underway. The deck department petty

officer, BM3 Richards, is supervising two men who are rigging gear on the O-1 level mazzanine near elevator 2. The warning horn is inoperative. Trouble develops; the boatswain mates preparing the rig make a mistake. BM3 Richards leaves his station on the hangar deck to go to the scene of the trouble, the mezzanine. He does not notify any of the hangar deck directors or Hangar Deck Control of the fact that he will be working temporarily in the elevator 2 well. The lighting conditions are poor with red elevator spot lights shining downward onto the elevator well. The bright yellow sulfur oxide (SOX) lights are not on. It is unclear why not. The mezzanine is in shadows.

Airman Gregory sits on the elevator 2 rounddown. He is tired; he is resting. He works in elevator 2 well day in and day out as V-3's supply man. This location is his daily work station. He is used to looking up at the mezzanine and seeing deck department personnel working. He is used to seeing deck department personnel hanging off the mezzanines unsupervised; he is used to seeing them throw FOD, cigarette butts and line out of the mezzanine and portals. He is used to going out onto the elevator when it is down to pick it all up. He is not used to seeing deck department personnel die.

On the hangar deck complacency has set in; supervisors are tired and a long night is ahead. A long day is behind them. The handler calls for the hangar deck to lower elevator 2. Deck department officers and chiefs discuss among themselves the upcoming unrep evolution; no one misses BM3 Richards. The hangar deck director and equipment operator man-up in preparation for lowering the aircraft elevator from flight deck level to hangar deck level. "E " Division trouble calls continue to be taken in Main Engineering Control. BM3 Richards bends over the mezzanine railing into the elevator 2 well to correct the rig, block and tackle. The "A" Division mechanic lights off the huge hydraulic pumps for the elevator. Airman Moyer mans the 1JG sound powered phone circuit on the hangar deck. The topside operator and the flight deck director man the flight deck station for elevator 2. Airman Gregory notices BM3 Richards hanging over the rail on the mezzanine; the buzz of conversation continues on the hangar deck and attention is diverted to the sliding padeye, to the rigging, to the schedule, to the people in the crowd. No one else sees BM3 Richards. The elevator operator checks the aft section of the elevator well. He watches the director. The topside operator raises the flight deck stanchions. He pulls the elevator locks and pushes the horn button. The horn doesn't sound. He calls over the 1JG that he is ready. ABH2 Slimm is the director. He gets the thumbs up from Airman Moyer. The director does what he does routinely hundreds of times a week and watches the elevator start to lower.

The next two seconds click by in slow motion. Airman Gregory looks up in horror at the descending elevator to the death path traced to BM3 Richard's position. Elevator 2 is well lubricated and works smoothly. It drops flawlessly, silently, heading for BM3 Richards. BM3 Richards senses something is wrong. It is getting dark quickly. Something is descending upon him. Airman Gregory's yell is drowned out in the din of machinery noise. BM3 Thompson, working on the mezzanine with BM3 Richards, yanks him out of harm's way by his sweaty collar. Elevator 2 makes it to the hangar deck. Tragedy is averted. The chain is broken at the last moment. BM3 Richards decides to write a letter to the Captain.

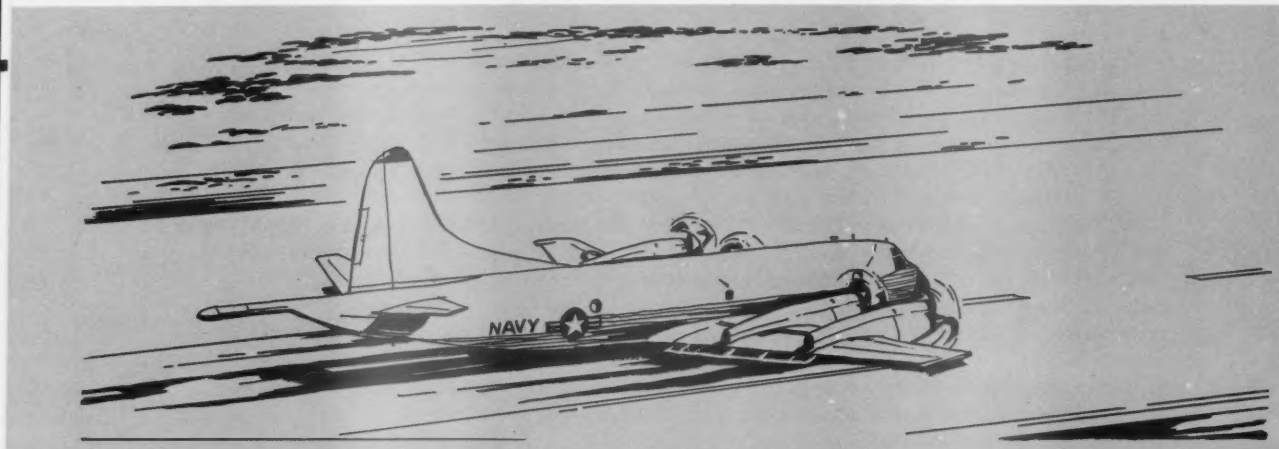
In several days the letter reaches the First Lieutenant. He passes it on. The Hangar Deck Officer reads it and takes steps to keep this from happening again.

"E" Division receives a trouble call on May 29, to repair elevator 2 horn. On May 30 the Hangar Deck Officer calls the "E" Division officer to expedite repairs. Two days of repairs are needed. "E" Division substitutes a claxon horn for the elevator 2 horn. On May 31 the horn works. The Hangar Deck Officer gathers all V-3 supervisors together and reviews the letter which BM3 Richards wrote to the Captain. The chief demonstrates the proper elevator clearing procedures, the yell to "stand clear of the elevator." V-3 learns its lesson cheaply. V-3 supervisors are instructed not to raise or lower the elevator if it is too dark to satisfactorily clear the elevator well area. Great emphasis is placed on this procedure. Reinforcement occurs several days later.

Conclusion: Problems don't disappear because of a letter to the Captain. Problems don't disappear because of a lecture. Problems don't disappear because of a CO. Problems simply don't disappear.

Supervision is the key to success in all naval operations. This night, BM3 Richards was out there alone, unsupervised. It is the supervisors, the experienced people who make any operation a success. Supervision is the key to the safety of people like BM3 Richards . With supervision there is nothing which this great ship cannot do. Without it there is very little which she can do. ◄

LCdr. Miller is the aviation safety officer for NAS Pensacola. He has served as an A-7 pilot with VA 155 and as anti-surface warfare officer in USS America (CV 66).



P-3 Wheels Warning. In the past seven years, the P-3 community has experienced several mishaps — including three Alpha- and one Charlie-class — caused by attempting to land without the gear extended. As you might imagine, this procedure is extremely hard on the airframe and usually renders the aircraft useless. Fortunately, we have not killed anyone . . . yet. In all cases, crew distraction or lack of cockpit discipline was a major contributing factor.

Some blame the aircraft design and say that if a more sophisticated landing gear warning system was installed — such as the system on airliners — P-3 gear-ups would be eliminated. Wait! We already have such a system in the aircraft. It usually works quite well in pairs or triplets. There is simply no excuse for a multiperson crew forgetting the landing checklist or forgetting to put the wheels down. There are checklists which cover all aspects of aircraft operations, including the landing phase, which if followed, would prevent such embarassing events. It sure is a waste to spend good money on a system to prevent humans from ignoring the checklists provided from "above" when these funds could be put to better use for more sophisticated mission equipment. Submitted by ADC M.G. Stungis, P-3 FE, QA Inspector for Commander, Reserve Patrol Wing Pacific.

A system that is a nuisance is more prone to be either ignored or suppressed. The new P-3 gear warning system was designed to replace a system that has given frequent, and at times, inappropriate warnings. No system can adequately meet every need or situation. This is why humans still exercise control of the aircraft from the cockpit. The bottom line: Always use your checklist. — Cdr. R.E. Messersmith, Aircraft Operations Division, Naval Safety Center.

Safe on the Ground? Inbound from the ship to home plate, the helo crew was happy to be heading home after a successful at-sea period.

After landing, the helo crew taxied to the customs area. Following customs clearance, they received permission from the tower to taxi with instructions to "hold short" of the duty runway. Both pilots heard what they wanted to hear and began taxiing across the duty runway to the squadron's hangar where their loved ones were waiting. They did not repeat the hold short instructions, but merely replied with a "Roger." They cleared the duty runway while another aircraft at the approach end delayed commencing its takeoff roll. What if the other aircraft hadn't suspended its takeoff? The collision would have been catastrophic.

A mishap was averted but this highlights dramatically the importance of communications. The difference between what the pilots thought they heard or expected to hear and what they were told could have been fatal. As the pilot-in-command of the helo emphasized in debrief, conducting a "safe and orderly flight" requires keeping your mind in the cockpit until your body is out of the cockpit. Safe on the ground? Not until the mission is *complete!*

Submitted by HSL 32

Skidding Corsair. The weapons det had been hectic but beneficial; good training had been accomplished. Now it was time to go home. The junior pilot went to the det's ready room to assume the SDO duties, and plan his cross-country flight back to NAS Southeast, with an intermediate stop in Texas. The morning schedule, brief and an early lunch went fine, and by early afternoon the two-plane flight was airborne. The two A-7s reached the midway point and the pilots got a quick but satisfactory meal before continuing on their way.

A weather front had crossed their

AIR BREAKS

destination field. It left a few rain puddles on the runway, but nothing significant. The last precipitation occurred six hours before, and other pilots reported braking action as good, although the runways were "moist."

Arriving at their destination at 2230 local, the Corsairs made a section GCA approach under VMC with a split for the dual runways from one mile out. The flight lead dropped off his wingman — the junior aviator — for the right runway, and made an uneventful touchdown on the left runway. Lead noted that there was a slight quartering tail wind, and continued the rollout.

The wingman touched down and began aerodynamic braking, noting deceleration to 100 knots and 80 knots approximately 3,000 feet before the 4,000- and 3,000-foot boards, respectively. The runway was 12,500 feet long. He selected anti-skid and deceleration appeared normal. With the airspeed indicator at zero, the pilot began braking to achieve taxi speed. However, with 1,300 feet remaining, he felt a loss of braking effectiveness, deselected anti-skid and reapplied manual brakes.

The A-7 was approaching the end of the runway, and the pilot thought he could make a safe turn off. He selected nose-gear steering and made the left turn. Instead, the aircraft skidded to the right, ran over a taxiway light, and departed the turn-off taxiway, coming to a stop with the landing gear just off the edge of the prepared surface. No damage resulted, except for a blown starboard main tire, which occurred while pulling the aircraft back onto the taxiway.

Squadron personnel watching the flight's arrival noted the second A-7's higher-than-normal rollout speed. The end of the right runway had extensive rubber deposits from numerous landings at the active field; it was in this particular area that final deceleration was attempted and reduced braking effectiveness encountered.

Relief and pleasure of completing a long cross-country, as well as a lot of hard work on the det, mingled with the fatigue and stress of an 18-hour day perhaps clouded the pilot's judgment and awareness of the possible hazards of a wet runway. He coasted the remaining length of the runway to slow to taxi speed, perhaps to save his brakes, but his good intentions were frustrated by the water and rubber on the runway.

Troubleshooter Finds Some; Shoots Same. Following the start of the A-6's port engine, the flight deck maintenance troubleshooter — an AQ1 cross-trained in the AD rate — detected an unusual odor when the starboard engine was started. Stationed under the keel of the aircraft, checking for fuel, bleed air and hydraulic leaks, he saw flashes of light coming from the nosewheel well area. Crawling forward to investigate, he discovered electrical arcing and fire in the aft portion of the wheel well.

He crawled out from under the Intruder and removed the internal power cable, signalling the pilot of "fire" and giving the engine shutdown signal. The pilot secured both engines and the aircrew exited the aircraft.

Flight deck control was notified and the flight deck tow truck brought over. However, the fire went out with the removal of electrical power. Investigators determined that the cause of the fire was internal shorting of a main cannon plug carrying 26 volts AC 400 cycle power.

Since this particular cannon plug is located directly beneath a fuel line from the in-flight refueling probe to the fuselage fuel cells, and considering the fuel and live ordnance on the aircraft, the troubleshooter's alertness and quick action merit praise. AQ1 Gordon Hartman of VA 165 deserves a pat on the back for avoiding a potential disaster. — Ed.

Hot Approach. As the A-7 driver was holding overhead the ship after a night ACLS mission, waiting for the previous event's aircraft to complete their recovery, he felt his aircraft and engine suddenly decelerate. Fuel flow had decreased from 4,200 to 3,000 pounds per hour, although he had not altered the throttle setting. Reducing power, the pilot checked to make sure the IGV (inlet guide vanes) override switch had not been activated, and then he performed a Maximum Rated Thrust (MRT) check. The engine produced only 3,000 pounds per hour fuel flow in normal fuel control, but performed normally in manual fuel, and he set himself up for an immediate recovery.

He dumped fuel and descended from 9,000 feet for a MODE II, ACLS Case III recovery. On final, with gear and flaps down, a throttle setting close to MRT was required for level flight. The engine turbine outlet temperature (TOT) was near 630 degrees Centigrade; naturally, the hot light was illuminated (583 degrees Centigrade is the normal maximum TOT at military).

Although the pilot had little reserve power available to stop settling or initiate a climb during the approach, he received help from CATTC and the LSO, and safely recovered with an OK 3. ◄

Somebody Out There

The Tomcat I was assigned had been downed on its last flight for a bad front cockpit airspeed indicator. "No problem," the maintenance control chief said, "they put a new indicator in it and it checked good on deck."

I taxied my trusty Tomcat to cat one for launch. It was pretty dark, so I reminded my RIO to give me an airspeed call as we went off. I also wanted a backup if my airspeed indicator didn't work. Sure enough as we became airborne my RIO called 150 knots while my indicator was only showing about 80. The angle of attack (AOA) was working OK so I felt relieved. The hop would not be difficult with an operable AOA system and backup airspeed calls from my RIO.

A 2+15 night air intercept flight is not very challenging and fuel considerations require that you be conservative with the throttles. I wanted to be at max trap fuel for my approach because you never know when the recovery will be delayed or if airborne fuel is available.

I was assigned a marshal altitude of 6,000 feet. Oh boy, I thought, I must be the sacrificial lamb. It never seems to fail that the first airplane on the approach gets a foul deck wave-off. After checking my fuel state I felt good because I would be a couple of hundred pounds above max trap at my ramp time.

I was established in the marshal stack in plenty of time to relax and think about the upcoming approach and trap. The airspeed indicator problem seemed to be more of a nuisance than anything else, and I was adjusted to using the AOA indicator as my airspeed reference. Wouldn't you know it, marshal said the launch was running late and assigned new approach times. No problem though, I had planned ahead. I'd still have enough gas for a possible foul deck wave-off and other approaches.

I commenced on time (as usual) and felt confident I could

Suddenly, the IFR probe popped out of the refueling probe. I backed out and plugged again.

Is Trying To Kill Me

By LCdr. Jim Barnett

get an OK three wire as I came down the chute. Leveling off at 1,200 feet, without my airspeed indicator, I began to feel a bit uncomfortable. Fortunately, that didn't last long, since I could use my AOA indexers after lowering the landing gear. I slowed to 15 units AOA and compared that to the RIO's airspeed and my computed airspeed for current landing weight. Everything was working as advertised. At three NM I prepared to start my descent using the ACLS needles. It sure seemed awful dark in front of my airplane. Oh well, I consoled myself with the knowledge that I would see the boat in a mile or two. At one mile, I finally realized that it wasn't going to happen. The FLOLS and landing area lights were still not on and at three-quarters of a mile, approach control directed a wave-off due to the launch still in progress.

I established myself on the downwind leg of the wave-off/bolter pattern and waited for approach to turn me back in. They finally called my interval but I was 12 NM downwind before I was directed to turn in for another approach. No sweat, I had plenty of time to get established on the approach, but I was using a lot of extra gas on that "cross-country" downwind.

A quick calculation of my fuel revealed I would have only 3,600 pounds of fuel when I called the ball. My RIO called the ball but forgot to tell Paddles that I did not have an airspeed indicator. Oh well, he was backing me up with calls off his indicator. He kept calling me fast, with a fast chevron in the AOA indexer. The meatball was showing me a little low, so a little attitude would fix the fast and low conditions. Then the LSO said I was *slow*. Well, every naval aviator will tell you low and slow is not a good place to be, when you're behind the boat at night. I applied power, but too much of it, and proceeded to bolter.

I really blew that one. Now it was time to prepare to do the next approach right. I got turned in at seven miles and as I came out of the turn, I saw an F/A-18 turning in front of me. Well, the approach controller really screwed that one up. My radar showed the Hornet 1.7 miles in front of me. Fortunately, the 18 got a foul deck wave-off. I was all set for a "rails" pass and a "slider" in the wardroom, but the wave-off lights came on for me, too! Now I was really hurting. I had 2,600 pounds of fuel, at night, in blue-water ops. Off toward the tanker I went and got a "tally-ho" after passing 2,500 feet. That F/A-18 was already plugged. And my RIO couldn't contact the tanker on the radio.

My RIO finally discovered that his radio had the wrong preset frequency dialed in. A quick check of my fuel state showed 800 pounds in each tank and my personal "fun meter" was already pegged to the left side. I made a quick call to the tanker that "I need to plug ASAP" and he said "hang on for just a minute and we'll be complete with the F/A-18." Great! I told myself to cool down, because I could easily fly around for another 15 to 20 minutes (assuming my fuel quantity indicator was accurate), but a little voice in the back of my mind kept reminding me what would happen after that 15 to 20 minutes were up if I didn't get some fuel *fast*.

Finally the Hornet left, and I set up to plug the tanker. I engaged the refueling drogue and my heart began to slow to a normal pace as my RIO called that we were receiving fuel. Suddenly, the IFR probe just popped out of the refueling drogue. I thought my heart had stopped beating. I backed out and plugged again. The probe popped off again. But each time I was getting 300 to 400 pounds of fuel. I think my fun meter finally broke at that point.

I called the Air Boss and explained my dilemma as I continued to engage and disengage the refueling drogue, getting 300 to 400 pounds each time. I told him I needed a ready-deck because when I got up to 3,500 pounds of fuel in my aircraft, I wanted to commence my approach. He said to "come on down" as soon as I was ready.

I finally left the tanker with 3,700 pounds of fuel, feeling like I was upside down. By now the airspeed indicator problem was **really** getting on my nerves. I told myself not to worry because I was always taught in the training command that the attitude instruments **never lie**. Thank God . . . this time they told me the truth.

At five NM I called Paddles and told him all my problems. He told me not to worry, that they'd catch me this time, but he advised (oh, by the way) that the two and three wires had been pulled. Wonderful! After all this, the pass was almost anticlimactic. My heart finally started beating again after I taxied out of the landing area.

To me, this experience reinforced a well-known philosophy. There are hundreds of people on the carrier directly and indirectly involved in my mission every time I fly my jet on and off the boat. They are doing the best they can to ensure my flight is a safe one. Nonetheless, every tail hook naval aviator knows that he must operate under the philosophy that "Somebody Out There Is Trying To Kill Me." ◄

LCdr. Jim Barnett entered the Navy through the AOCS program and was originally a F-14 RIO. After his first fleet tour with VF 24, he reported to the training command for pilot training. He is currently the aviation safety officer for VF 21 and just recently returned from a WESTPAC/Indian Ocean deployment in USS *Constellation*.

"Yeah, He Was a Hot Pilot, But . . .!"

By Peter Mersky

"Today, SH means bringing the plane and you back safely . . . every time."

IT had been a routinely boring air intercept control mission, coupled with three practice ACLS approaches, all on a moonless night. The controller told the F-14 to clean up and check in with marshal passing 2,500 feet.

"What the hey," the Tomcat pilot thought, "end of cruise, and I'm a hot fighter pilot. Let's give the guys on the deck a show. An afterburner shot on the last wave-off, one mile, 400 feet, at night. Loud and bright, right over the ship."

The show the young aviator got himself, as the aircraft accelerated in Zone 3, was sufficient. The F-14 seemed to enter a steep climb even though no back pressure had been applied to the stick. With the reduced light, there were no visual cues, but the surprised pilot pushed the nose over and raised the gear and flaps. A quick scan of his instruments revealed that, in truth, his aircraft was flying straight and level, accelerating

"I've known several pilots who finally killed themselves because they ended up where they shouldn't have been. It's tough enough in combat, but in peacetime?"

through 300 knots. As his heart rate returned to normal, he de-selected burner and settled back into a routine climb. His RIO never knew about the little drama being played out five feet in front of him.

Recently, I had lunch with a friend who, as an A-4 driver, had seen considerable combat in Vietnam, particularly around Khe Sanh in 1968. His ribbons indicated that he was well qualified to talk about flying aircraft in harm's way.

"Did you ever stop to think about the guys — the real Sierra Hotel pilots — who finally kill themselves," he asked, "those guys who everyone says are good aviators, always living on the edge of the envelope, doing things just this side of legal, and always coming back, except the last time." He stabbed a piece of lettuce. The curse of senior aviators in Pentagon staff jobs is the Leafy Green Lunch.

"I've known several pilots who finally killed themselves because they ended up where they shouldn't have been. It's tough enough in combat, but in peacetime? If the mission says be at 200 feet, why press it to 50?" Then he told me about a friend in an A-4 squadron.

This particular Scooter pilot was universally acknowledged to be a good stick. He knew the airplane and had lots of flight time. But he was also given to pushing right up against the edge. His last hop, was a low level, and he couldn't resist a down-in-the-weeds hot pass along a mountain ridge. He wrapped his plane up in a tight turn and dug his wing tip into the dirt. At that speed and altitude, well . . . My friend was part of the investigation team and he spent time at the crash site sifting through the pieces which had once been an airplane.

Kicking aside a charred piece of metal, he discovered the pilot's wallet. He picked up the burnt leather and opened it. The wallet was full of pictures of the pilot's family, traditional snapshots of two kids — cute, naturally — and his wife. My friend sighed.

"All I could think of when I saw those kids was 'Yeah, he was a hot pilot, but where did it get him and his family?' "

Our conversation turned to a mutual acquaintance, another well-known tiger who died while making a low-level pass. This aviator, too, had considerable combat time and a reputation as a good pilot. But he was also someone who enjoyed flat-hatting. He was well on his way to commanding a squadron, but had trouble keeping his nose clean. Seems there was always a call coming into the squadron about a low pass by one of our planes. Since this pilot was usually the only one airborne at the time, the identity of the culprit was no secret.

Our friend finally "teased the animal" once too often and got bitten. The plane broke apart in midair — no one is really sure why — and he ejected outside the envelope of the seat. There were many extenuating circumstances involving the flight and the ejection, but basically, he was unnecessarily low and fast.

"You've got to be in that situation yourself," my friend said. "Who knows what he was experiencing? The plane oscillating, bouncing him around. Maybe he had lights blinking at him all over the cockpit. Maybe there was a fire in the cockpit. And the engine — what did that sound like? All those things coming at him and he had nowhere to go, no cushion."

I knew what he was driving at. Don't put yourself in the type of situation where all these things can get you. Flying *is* great, and in and of itself, is no more dangerous than driving a car in traffic (shudder). But add all the other potentially dangerous activities, such as carrier ops, high-speed low-level mission requirements, and even combat, to the basics; you can enter a flight regime for which you're not prepared.

Speaking of ejections, that's a specific area that can have a direct relationship with how SH you think you are. There is sometimes a fine line between how long you stay with the airplane and when you leave it. Recently, a pilot made the decision to remain in the aircraft to try to steer it away from a crowded office park snuggled up to the departure corridor. He managed to get the plane away from this potentially disastrous area before punching out, outside the envelope of the seat. He was lucky — he was the first to admit it — and survived with only minor abrasions.

From the moment you walk through the hallowed gates of Pensacola, you are constantly told, "Be a Tiger!" Everyone has his own ideas of what constitutes a tiger, and at what level they must function to maintain their "tigerish" demeanor. It is difficult at times to put the tiger away for a moment or two to sort things out, particularly if you don't have more than a moment.

Take a good look at yourself, the airplane and the mission the next time you find yourself beginning to feel SH. There is an old slogan: Complacency Kills. It still does, and when it is aided by a falsely-elevated sense of one's capabilities or station, only the worst can and usually does happen. Today, SH means bringing the plane and you back safely . . . every time.

Peter Mersky is a staff writer for Approach. Widely published as an aviation writer, he has authored three books on the subject.

Crew Concept

By Ltjg. Tom Powell

I WAS a nugget Tomcat RIO on my first WESTPAC cruise. The ship had just left the Philippine Islands en route to Gonzo Station. Heavy flight operations increased the tasking on all of us, and the flight schedule was changing hourly. My day consisted of a midmorning Alert 5, followed by a mid-afternoon Prifly watch, followed immediately by a brief for a two-hour air intercept control (AIC) mission and a no-moon night recovery. Because a flap assymetry emergency occurred while I was in Prifly as the squadron rep, I missed my AIC brief completely. No problem right? It's AIC.

Back in the ready room I was met by my pilot for the event. A schedule change had netted me a different pilot than the one I normally crew with. Handing me a brief card he said, "Let's walk. I've got it covered."

Following a normal launch and check-in with strike, we were directed, "Mission change. Switch button 10." After receiving a hot vector we rendezvoused on two TU-95 Bears. The excitement of Bear escort was a welcome change from AIC and as darkness approached, the Bears went on their way. Since neither of us were seasoned Bear interceptors, the excitement left us somewhat unprepared for what was about to happen.

After one quick turn in marshal we commenced our approach and called the ball with state 4.6. "Hook-skip bolter," the LSO said as we turned downwind. "No sweat, so we boltered," I thought to myself as we set up for our second approach. That approach went well but ended in another hook-skip bolter.

As we turned downwind a slight uneasiness started to grow as we began to wonder if there wasn't something wrong with our hook. The third approach commenced and I called the ball with state 3.0. Normal touchdown in the wires occurred but something was wrong. I didn't feel power come on and I didn't feel the deceleration of catching a wire. We continued down the deck and time expansion began. The aircraft came off the angle at around 100 knots. As I felt the settle and saw the deck rise to my right, I realized I was already gripping the ejection handle as the boss screamed "Power, Power, Power!" My mind was rapidly calculating how far it was to the water based on how much the deck was rising to the right of me. I was waiting for that "I've got it" or "Eject" call. Nothing! I was pulling the handle if we got any lower or if I felt a wing dip either side.

Suddenly, I felt power finally come on and a 30-degree wings level nose-up pitch attitude established. Again if I felt a roll-off, I was pulling the handle. The burner lit the night as I saw us climb back up past the deck and to 2,000 feet. Still shaking, we joined the tanker.

With refueling complete and a quick hook check from the tanker, we set up for our fourth approach. This time, fortunately, we trapped.

Reviewing the PLAT tape opened my eyes to just how bad this bolter was. The pilot, engrossed with getting aboard, went to full direct lift control and idle on touchdown. Military power was not applied until we were past the wires and heading off the angle. The aircraft settled to within 20 to 30 feet of the water before burners and attitude pulled us out. Everyone I talked to thought ejection was imminent and expected to see chutes.

In reviewing this incident we felt the pilot was in error for not applying military power on touchdown and not establishing the proper attitude going off the angle. The fact that he didn't say either "I've got it" or "Eject" kept me guessing as to what the actual aircraft status was. My failure to ask him, "Have you got it?" did not help. No longer were we working as a crew and I was left with the decision to eject or not eject, based on my limited experience.

Believe me, as a first-tour RIO, I was not prepared to handle this situation. It was later pointed out to me that had I pulled the handle we would have given 30 million dollars of good Turkey to the fish, but no one who saw this bolter would fault that decision. However, had the airplane been bad and had I delayed the ejection, then we could be visiting St. Peter right now. All because of a lack of communication between cockpits during an emergency situation.

The lessons learned were many. The importance of briefing the "what ifs" and what each aircrew is expecting to hear from the other during extremis situations cannot be overemphasized. We failed to do this because of a lack of time. This becomes even more of a factor when flying with someone other than your normal crew. ◄

Ltjg. Powell has recently returned from his "nugget" cruise to the Western Pacific and Indian Ocean aboard USS *Constellation*. He is currently assigned to VF 21.

Almost Landed Short!

By Lt. Larry Spitser

THE aircraft simply fell out from under me. As the terrain well short of the runway threshold rapidly approached, I frantically transmitted "Power, power!" over the ICS. The student pilot, on his first flight at the controls of a Prowler, responded and the engines began a painfully slow spool-up. Achieving something above idle RPM was gratifying and I thanked God for J-52 P408s! We had broken our rate of descent with the main mounts just clearing the ground.

As we climbed out to enter the GCA box pattern, I thought back on how I had set us up for a near landing short of the runway.

It was a reasonably uneventful FAM hop to the MOA to explore EA-6B handling characteristics, then a TACAN approach to home plate and planned multiple touch-and-go landings. The student had demonstrated solid airmanship and I was as comfortable as I ever am while flying without control of a stick and throttle. I instructed him to fly the approach entirely on instruments to the missed approach point (MAP). He would then see the picture he could expect if breaking out at minimums (my usual procedure for that hop). The MAP for the runway in use places the aircraft above the FLOS glide path and slightly to the left of centerline, a point I had briefed. We reached the MAP with zero rate of descent and I said, "OK, there's your picture, let's start it down and get a ball on the mirror."

Observing an obvious reluctance to pull power, I informed the student he would have to retard the throttles a little. This request was met by adjustments resulting in a somewhat greater than normal rate of descent, which still wouldn't hack it at the rate we were closing on the landing area. Now thoroughly engrossed in my efforts to salvage an approach that the student certainly didn't have his heart in, I reiterated, "Let's get it down."

Another power reduction, and **Voila,** the ball appeared from the top! Before I could say, "Now let's catch it and just keep it on the mirror," the student reacted to something he could now relate to, a high ball! You guessed it! Those P408s went to idle and the VSI from a healthy 1,500 feet per minute to something astronomical, which brings us back to the beginning of this story. In an aircraft without the power response of the Prowler, the ending might not have been two GCAs, six touch-and-go's and an uneventful full stop.

What did I learn as a flight instructor? Always keep in mind the student's stage of training and don't overload him. Even though I'd never experienced any trouble before, it probably wasn't a good idea to make a student's first approach one he wouldn't be well set up for. A GCA pickup would have been a better alternative.

After noticing the student's reluctance to pull power, I should have directed an immediate go-around, rather than pressing on with the limited time available to get the aircraft within acceptable parameters. In the training environment never delay a wave-off!

Finally, an instructor pilot, especially one without dual controls available, can't afford to become so absorbed in coaching his student that he fails to anticipate or recognize a potentially dangerous situation. After it develops, the time just isn't available to talk through a recovery. I was fortunate in that both student and aircraft were responsive to my calls for power. Maybe you won't be so lucky! ◄

The crew coordination concept has as much validity in a pilot-to-pilot cockpit as in the more common pilot/NFO cockpit. Part of that coordination must entail full situational awareness and an appreciation of how the other crew member is affecting the flight situation. — Ed.

Lt. Spitser is a flight instructor with VAQ 129, NAS Whidbey Island, Wash.

Bird Avoidance

Adapted from an article by Capt. Jeffrey J. Short, USAF

CURRENT military tactics stress high-speed low-level flight operations to significantly increase the chances for successful mission completion. However, low-level operations also significantly increase the risk of encountering birds. About 10 percent of all Navy birdstrikes happen while the aircraft is engaged in low-level operations. Since 1981, 407 of 2,170 reported birdstrikes occurred during low-level operations. Forty-one percent of these birdstrikes caused some damage. The 30 Class C mishaps at low level cost more than $1.1 million. Recent birdstrike mishaps involving high airspeeds and low altitudes have underscored the fact that aircraft are still very vulnerable. What more can be done other than increasing awareness, keeping your eyes open and prebriefing emergency procedures in case of a birdstrike?

Designing aircraft to withstand all bird impacts would sacrifice important performance characteristics for added safety. It is virtually impossible to keep jet engines from ingesting birds. It is possible to develop birdstrike resistant aircraft components, such as canopies, but this does not reduce birdstrikes, only the damage they cause.

Avoiding known bird concentrations or movements offers the most feasible method of reducing birdstrikes during training. The USAF Bird/Aircraft Strike Hazard (BASH) Team is attempting to reduce birdstrike hazards during low-level training through a predictive bird avoidance model. The purpose of this model is to estimate the birdstrike risk on low-level routes, given date and time of flight, low-level route

number and type of aircraft. This computer analysis can help schedulers consider bird concentrations in advance, before the flight is made. Using a predictive model, seasonal bird hazards can be factored into planning for operations on low-level training routes or ranges.

The bird avoidance model considers both changes in aircraft mission profiles and bird populations within a particular geographic region. It is versatile enough to accommodate various aircraft types, schedules and missions. In addition, the model considers the timing of bird movements as well as the intensity of migration, taking into account differences in bird behavior and variations in the regional availability of habitat.

Low-Level Routes. There are several hundred military low-level routes, ranges and operating areas throughout the CONUS. *However, 46 percent of the Navy's birdstrikes reported on VR routes occurred only on eight routes.* Low-level operations occur over all terrain and under a variety of conditions. A wide assortment of aircraft and missions use these routes for training. Some missions are scheduled several months in advance while others are flown almost on the spur of the moment. Mission profiles vary extensively depending on aircraft model, altitude, airspeed, time of day, and route entry and exit points.

Each low-level route or range has a certain degree of bird risk associated with flying a particular mission profile. This risk can be calculated to help plan and schedule flights to minimize the risk of a birdstrike.

Waterfowl Populations. Information about bird populations is basic to estimating the relative risk of low-level flights. For example, 12 to 15 percent of all Air Force birdstrikes involve ducks, geese or swans, most occurring during low-level operations. During the last century, large amounts of information were accumulated on waterfowl activities including population estimates, preferred migratory routes and behavior. To adapt this information, migratory data on waterfowl were consolidated to depict preferred migratory routes.

Low-level routes are often located in remote regions where operations will not interfere with other air traffic, municipalities and farming. Remote areas are also regions of intense bird activity, particularly during migration. Waterfowl travel in flocks and prefer specific wetland areas. Risk from waterfowl movements depends on whether the birds are involved in migration or feeding activities: whether hazards are posed by migrating or nonmigrating waterfowl. Generally migration takes place between refuges that are located in prime wetland areas. Birds at refuges, within 30 miles of a low-level route, were considered to be a hazard to low-level operations because of their far-reaching feeding flights.

Birdstrike risk is related both to the density of birds in the airspace and the volume of airspace swept by an aircraft. The chance of an aircraft hitting a bird is directly proportional to the frontal area of the aircraft. The amount of damage that occurs is related to the aircraft speed, the size of the bird, the location of the strike on the aircraft and the materials from which the strike area is fabricated, e.g., titanium, glass, fiberglas. Note: $KE = \frac{1}{2} MV^2$. The energy exchanged on impact is directly proportional to the mass of the bird (weight) and proportional to the square of velocity. This means:

- A 4-pound bird impacts with four times the force of a 1-pound bird.
- 300 knots results in an impact force of 1.44 times the force at 250 knots.
- Moral — stay away from seagulls and keep your speed as low as is reasonable in a possible birdstrike area.

How can the squadron scheduling officer use the bird hazard information? One method would be to compare the risk for all routes available to be flown during a certain week and fly the route having the least risk. Heavies usually have more choice because of their greater range. This gives them the ability to fly different routes each month as the bird migratory activity progresses from north-to-south in the fall (vice versa in the spring). This method may require considerable coordination and planning but could significantly reduce waterfowl birdstrike risks.

The bird avoidance model allows updates as new information becomes available such as the formation of new waterfowl refuges or development of a new low-level route. The model can examine the birdstrike on each segment of a route. This option is valuable in order to plan routes. Alternate routing now can be more quickly analyzed for bird hazards than was previously possible.

In the future, a centrally located system with multiple access via telephone lines could allow route planners and users to query the system about bird hazards expected on a particular route or range at a specific time. Eventually, given access to the system, pilots could alter their flight plans to fly routes having lower birdstrike risk. For now, all requests for bird avoidance models should be directed to Code 114, Naval Safety Center, Autovon 564-3381.

The bird avoidance model will serve to increase overall aircrew awareness of the problem and will provide a basis for further research to reduce birdstrikes away from airfields. As aircrew, your help is needed to reduce birdstrikes. Report all birdstrikes and be sure to provide complete information. At present, only 35 percent of the reported low-level birdstrikes identify the route being flown. ◄

Capt. Short was stationed at the Air Force Engineering and Services Center, Tyndall AFB, Fla., when his article was published in the June 1982 issue of Flying Safety magazine.

Just What Am I Carrying?

By Cdr. Brad Winsted

I'M a VERTREP pilot in a H-46 squadron, so why should I be interested in hazardous cargo? The answer is obvious for any pilot capable of carrying internal cargo. Hazardous cargo, when not properly packaged, documented and labeled, may result in the incapacitation of pilots, crews and passengers or may react to other cargo, passengers smoking, or aircraft electrical discharge causing detonation.

Have you ever looked over your shoulder as your strong and eager aircrewman or flight deck personnel are loading something "interesting" into your aircraft? Or have you ever asked the air transfer officer (ATO) or combat cargo officer (CCO) to tell you just what that smelly cargo his men have just loaded into your helicopter is and received shrugged shoulders as the air boss is yelling at you to clear his flight deck.

In the last few years there have been numerous articles in Approach magazine ("Six Minutes to Eternity," April 1984) and Weekly Summary ("Deadly Cargo," 18-24 November 1984 and "Safety Survey Gouge on Hazardous Cargo," 10-16 February 1985) on the obvious dangers of transporting hazardous cargo. For the C-1, C-2, C-130 and C-9, this is old hat, but for most of the helicopter community the training concerning hazardous cargo is minimal. Hazardous cargo incidents are on the increase. Yet, I wonder if your training

programs are.

Several scenarios come quickly to mind. Fifty-five-gallon gasoline drums are rolled into the helicopter for forward support of ground troops. Before you know it, fumes are everywhere. An electrical spark in the aft supervisory panel sets off an explosion and then . . . Or two hazardous articles such as flares and detonating fuzes are loaded next to each other for a field exercise. The substances are incompatible. There is an explosion and then . . . Or some flammable liquid such as hexane is spotted for loading and the handlers do not realize this item can only be carried under conditions of operational necessity and then transported with no passengers embarked.

For aircrewmen with little or no exposure to NAVSUP PUB 505, "Preparation of Hazardous Material for Military Air Shipment," this article will serve as an introduction. Hazardous materials include explosives, flammable liquids and solids, oxidizers, corrosive materials, compressed gases, poisons and other regulated material in NAVSUP PUB 505. Such items are required to be properly packaged for airshipment and *must not* be loaded with incompatible materials.

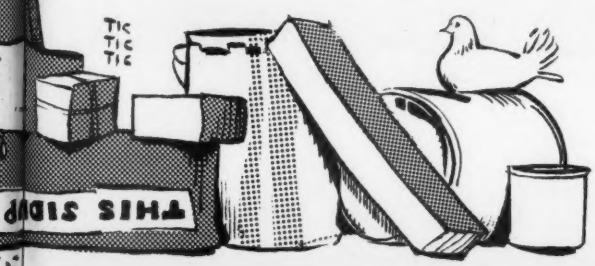
In some cases passengers cannot be transported concurrently with certain materials. If hazardous items are damaged, leaking or improperly packed, marked or labeled they should not be offered or accepted for transportation. There are clear NAVSUP PUB 505 guidelines and they must be strictly followed to ensure safety of flight.

The CV NATOPS Manual states that the ATO's responsibilities include "being familiar with load capabilities/restrictions, and inspecting cargo prior to loading to ensure it is being shipped per NAVSUP PUB 505." The pilot should be provided a "detailed mission requirement card which includes weight and description of cargo being delivered to and from each ship."

The LHA/LPH NATOPS Manual has similar wording. The CCO is responsible for the safe and orderly flow of cargo and should "inspect cargo prior to loading to ensure it is embarked per existing instructions (i.e. NAVSUP PUB 505)." Mission cards from the CCO should list "weight and description of cargo to be picked up or delivered."

Ask the individuals on your ship who prepare hazardous cargo the following:

1. As required by NAVSUP PUB 505, para 1-22, do the personnel who perform hazardous cargo handling or loading duties receive initial and annual refresher training? (On a non-air-capable ship this would normally be the Cargo Officer or shipping people in supply.)



2. Who certifies hazardous internal cargo ready for shipment? Have designated certifiers been qualified by attending an authorized course per NAVSUP PUB 505 para 1-20?

3. Have designated handlers had their training properly documented per NAVSUP PUB 505 para 1-20?

In Chapter 3 of NAVSUP PUB 505, tactical and contingency airlift operations are discussed. This type of operational support sustains immediate and responsive air movement and delivery of combat personnel and material directly to or within an objective area. Some of the more stringent guidelines are relaxed under these operational conditions for airshipment of hazardous material. At-sea aircraft carrier or related support operations could fall into this category. Department of Transportation and military specification containers prescribed in NAVSUP PUB 505 for specific materials will still be used whenever compliance does not hinder the military objectives. Such operations, however, permit certain hazardous cargo to be shipped in the same aircraft with other hazardous cargo not normally allowed. Under these conditions when hazardous materials are removed from their original packing for expeditious off load, aircrew and handling personnel must be apprised of the hazards involved. Even under these special circumstances, qualified specialists must still continue to certify hazardous materials. Labeling of the hazardous material for tactical or contingency movement must also continue as per NAVSUP PUB 505. Therefore, hazardous cargo handling procedures for tactical or contingency airlift operations have special guidelines that must be followed.

As logistical support helicopter pilots, how many of us have glanced at NAVSUP PUB 505? Does your squadron even have one? I know I really had not looked at one until I had an incident where we were asked to handle some flammable liquids improperly packaged for shipment. After the flight I remember wishing our crewmen had been better prepared to inspect the cargo. I should have asked some educated questions on the proper packaging of dangerous cargo.

All units involved with internal hazardous cargo transport should review their training programs. How many people in your helicopter squadron have had any training in the inspection, identification and packing of hazardous cargo? We cannot always rely on certifiers or flight deck personnel knowing exactly what we can and cannot load into our aircraft. We must be ready to ask the hard questions and be knowledgeable enough to know what to look for prior to loading. All helicopter aircraft commanders and aircrewmen must be prepared to refuse any cargo suspected of being improperly packaged for flight. Are you ready to say "NO!" when the occasion presents itself? Probably not, unless your squadron has taken hazardous cargo as seriously as it does other factors that can destroy aircraft and lives. There can be no substitute for proper training in hazardous cargo preparation and transport procedures. Let's be safe and haul safe!

Cdr. Winsted is an HH-46A pilot with HC 5. He has flown most of the Navy's helicopters, including the H-34, H-2, UH-1, TH-57 and CH-46D.

HOW PREPARED ARE YOU?

By Lt. J.B. Hollyer

Following the promulgation of a new station premishap plan, our squadron began preparation for a full blown mishap drill, involving the entire base and its tenant commands. The "mishap" crew briefed at 0600 as a ready alert launch with a 0730 takeoff time. As the aircrew began to strap in for engine starts, they were informed of a change in plans and were instructed to do a high-speed abort and clear the active runway at the far end where they were to secure the aircraft and board a bus for transportation to the "mishap scene." At 0730 the squadron mustered for quarters and was informed that a drill would occur sometime during

the day, and although many aspects might seem real and even frightening, they were to understand that it was only a drill.

The mishap aircraft began the takeoff roll at 0730 and aborted as planned. The pilot at the controls inadvertently applied too much wheel braking during the abort and the crash crews were called to cool the brakes, using the primary crash circuit. Approximately 15 minutes later an "observer" on the beach phoned base ops to report the crash of a P-3 on takeoff. There were survivors on the beach and in the water, with widely scattered wreckage. The caller emphasized the fact that this was a drill.

Tower personnel, having already used the primary crash circuit for the hot brakes, decided to use the secondary crash phones. This resulted in an extremely limited number of personnel being notified. While tower personnel realized this, they failed to notify everyone, causing some confusion.

Base security stumbled over the mishap scene during a normal patrol of the beach area and began notification procedures. Medical arrived soon after they were notified by base security. Their techniques and procedures for handling mass casualties got a real workout!

The squadron responded with enthusiasm and precision: seven minutes for the "five-minute phone message" and 23 minutes for the "20-minute message." All members of the mishap board began arriving at the duty office, and I suddenly realized they each needed their own copy of the premishap plan (or at least the applicable section).

The squadron was inundated with phone calls requesting information and injury reports. One caller said he had planted a bomb on the mishap aircraft and on several others, due to go off in one hour — not an unrealistic occurrence during any mishap. The bomb threat checklist was begun and again base security came through with shining colors. Maintenance added realism by halting preflights, clearing the line and hangars, organizing search teams and coordinating with security and Naval Investigative Service (NIS) units on the scene.

Continued

All in all, these drills were a successful learning experience for the aircrews, the squadrons and the naval air stations.

A squadron "actor" and two "make-up artists" simulate a casualty.

Survivors in the rafts enjoyed two hours of bobbing around shooting flares, doing various drills and talking to tower on the PRC-90, which worked as advertised.

We held a similar drill when we returned to the field involving aircrew in a cold water environment, using wet suits and assisted by the Coast Guard and our Aviation Physiology Department.

The mishap crew was again uninformed and pulled from an aircraft during preflight, transported to a local harbor and taken out to sea by the Coast Guard. The crew donned their Imperials and were dropped, one at a time, off the stern of the launch, each being required to swim to his raft, tow injured crew members to the raft, then bring them aboard.

All East Coast VP squadrons deploy to cold water environments, as do most West Coast squadrons; yet, this was the first time many members of the "mishap" crew had ever donned an Imperial wet suit. By force of habit and training, all crewmen inflated their LPAs upon water entry. This caused severe problems with maneuverability in the water and made it impossible to get into the raft once they reached it. The level of effort required to swim to the raft was incredible and as the breeze pushed the raft (even with the sea anchor out), the crews had to work harder and harder to catch up. Exertion caused many crewmen to overheat while wearing the Imperials, even though the water temperature was around 50 degrees Fahrenheit. Boredom and sea sickness were very common complaints among all participants, though it was a bright sunny day with 4 to 6 feet seas, and they only spent 30 minutes in the raft.

One highlight of the drill was a P-3 "mark on top." This evolution gave us tremendous insight into actual SAR evolutions conducted by a P-3.

All in all, these drills were a successful learning experience for the aircrews, the squadrons and the naval air stations.

We should all keep in mind, however, that while these drills help us all to prepare for disasterous events, if we ever had to execute the premishap plan which we spent so much time on, it would be because of a failure in our safety programs. ◄

Lt. Hollyer is aviation safety officer for VP 10, NAS Brunswick, Maine.

Photos, write-ups and a sound-on slide presentation on drills are available on a returnable basis from the VP 10 Safety Department, NAS Brunswick, Maine 04011, Autovon 476-2440 or 2540 — Ed.

After a mishap . . .

Who's Going to Do the JAG Investigation?

By Lt. Col. R.E. Yeend, USMC

IT happened. The phone call the CO least wanted to receive came in at 1600 Friday — AZ 13 crashed: two deaths (co-pilot and crew chief), two serious injuries (HAC and 1st mech). The safety officer was informed; he rounded up the Aircraft Mishap Board (AMB) and it began to execute the well-rehearsed mishap plan. The admin officer was called in to begin the casualty reporting procedures. All the necessary calls were made. The CO didn't have to tell the safety officer or the admin officer that they'd be working through the weekend; there was important work to be done and it was clearly their responsibility to see it through.

By Monday, the AMB had examined the wreckage, interviewed witnesses, sent off for engineering investigations and started writing the Mishap Investigation Report (MIR). The admin officer sent out his casualty reports and the CO visited the families of each of the four crewmen. None of these tasks was pleasant, but each had to be done and certainly each officer had prepared himself ahead of time for such an eventuality.

Monday afternoon the following exchange took place:

XO: "Sir, we've got to assign an officer to do a JAG investigation on AZ 13."

CO: "You're right, who do we have available?"

XO: "Well, sir, all the field grade are either on the AMB or essential to their shops. I recommend Capt. Alpha, he's a little junior, but a hard charger and will do a good job."

CO: "Does he have any safety experience?"

XO: "No sir, all our safety-trained officers are on the AMB except Major Bravo and we need him in Ops since Capt. Charlie, his assistant, was flying the aircraft."

CO: "Hmm, has Capt. Alpha ever done a JAG?"

XO: "Well, no sir, but he's a quick learner and his section can spare him for the week or so that the JAG will take."

CO: "OK, prepare the appointing order."

Sound familiar? "Well, perhaps," you're saying, "but, so what? After all, the JAG was named by the next working day, the officer sounds competent, and besides, who really cares about the JAG anyway? Isn't the important consideration to find out what happened so that we can avoid a repeat, and doesn't the MIR do that?"

Certainly the MIR is a critical element of the safety program, but consider for a moment that to anyone outside the safety chain, the JAG is the ONLY investigation available to determine the circumstances surrounding the mishap. As such, it is the document which will be used as the basis for the following actions:

- Court(s) martial
- Lawsuits filed by lawyers of widows
- Government defense of lawsuits

These actions have potential consequences involving millions of dollars and many careers. Also, there have been frequent legal attacks on the privileged status of the MIR because of the significant difference between the preparation of it and of the JAG report. The AMB is composed of the most experienced officers in the squadron, at least one of whom has been specifically trained to conduct investigations of this type. The JAG is generally conducted by one relatively junior officer with no specific training in **any** type of investigation. Moreover, the AMB has access to information which is denied the JAG investigator. If YOU were suing the government (manufacturers, and the survivors, and the subcontractors, and the . . .), wouldn't you try to get the MIR?

So, what's the answer? There is, unfortunately, no school solution, but in HMM 161 we have taken some measures which we think will alleviate the problem. Three JAG investigating officers are appointed, with the expectation that two of them would conduct the JAG investigation, should a mishap occur. All have been instructed in the basics of mishap investigation and attend the regular AMB training conducted by the safety officer. An important element of this training is the explanation of differences between the MIR and JAG report. They review other JAG reports and formulate a plan for doing their own, including the establishment of a JAG equivalent of a safety department mishap investigation kit (privacy act statements, JAGMAN 0306 warning statements, administrative supplies).

The thrust of our approach is not to inflate the JAG investigation into a much larger, more complex evolution, but rather to provide a framework within which the JAG report can be completed as professionally and as painlessly as possible. To the extent that we are successful in this approach, we will have protected the interests of the individuals involved in a mishap, those of the government and the privileged status of the MIR. ◄

Lt. Col. Yeend is commanding officer of HMM 161, a West Coast based Marine medium helicopter squadron. A former safety director for the First MAW, he has had FMF tours in the H-34, UH-1, OV-10 and H-46. A test pilot school graduate, he served four years at NATC and four years at NAVAIRSYSCOM.

. . . Since the No. 1 engine had overtemped on flameout, I had been reluctant to restart it. Now it was time to sacrifice an engine. . . .

"It ain't over 'til it's over"

By Cdr. Robert E. Montgomery

SINCE my first day in flight training, I have heard the adage stated and emphasized many times, "the flight is not over until wheels are chocked, engines shut down and post-flight walk-around complete." Sixteen years and 4,600 flight hours later I abruptly experienced the true meaning of that phrase.

All phases of this particular S-3 flight had been perfect. The mission was real world ASW. Flight duration was scheduled for seven hours with extended overwater transit time. Good navigation and fuel planning were critical. A thorough brief was conducted two hours prior to flight and launch was on time. With the cooperation of departure control and center, our route of flight and profile to and from station were exactly as planned. On-station contact was gained and target prosecution was conducted as briefed. It sure was nice to be flying a full-system aircraft with a well-trained, proficient crew.

During the idle descent from FL350 into homefield with a TACAN lock-on and VFR weather report, I was congratulating the crew for a job well done. We had 1 nm of navigation error after 6.5 hours of flight, and fuel consumed was within 50 pounds of what we had planned. At seven miles with the field in sight, 2,000 pounds of fuel remaining and no other traffic in the pattern, the COTAC called for a carrier break. Cleared as requested, we patted ourselves on the back one more time for a job well done and a perfect ending to a perfect flight. All we had to do was land.

Approaching the numbers, engine instruments checked good, plenty of fuel, harness locked, 6.7 hours of flight time. In the break the throttles were retarded to idle and speed brakes extended to 45 degrees. Decelerating through 186 knots, the landing gear was lowered, followed immediately by a master caution light. Noting that the No. 1 generator had tripped off, I decided to continue and land, but the landing gear was taking too long to extend.

A second check of the master caution panel and engine instruments revealed that the No. 1 hydraulic pressure light was also illuminated and that the ITT (inter-turbine temperature) was rising. The No. 1 engine had actually flamed out and the No. 1 ITT warning light illuminated, indicating engine overtemp.

Not to worry, we were abeam with landing gear in trail. I executed emergency shutdown procedures for the No. 1 engine and directed the COTAC to start the APU (auxillary power unit) and EHP (emergency hydraulic pump). After all, this fancy gear wouldn't be in the airplane if it weren't intended to be used. Once the EHP came on line it would power the No. 1 hydraulic system, the landing gear would extend, and we would land this pass.

It suddenly became very quiet in the airplane. I looked at the COTAC and saw that he was frantically trying to reset the No. 2 generator. The EHP will not run without electrical power.

At the 90-degree position I decided it might be a good idea to wave-off the approach. At least the airspeed indicator, altimeter and standby gyro were still working. Both primary heading and attitude sources require electrical power. A quick assessment of the situation revealed we had lost the port engine and associated hydraulic system, both generators and the APU. The windshield fogged over and obscured visual reference to the ground. Windshield heat requires electrical power. We had no radios or ICS communication.

Orbiting the field at 1,000 feet after what seemed like several minutes and numerous reset attempts, the No. 2 generator finally reset, but it would not power the entire electrical load. We did regain ICS, UHF communications, fuel quantity indication (1,600 pounds) and an unsafe landing gear indication. I was beginning to feel better. I directed the COTAC to extend the emergency landing gear handle. We would just drop the tail hook and make an arrested landing. Not so fast — the landing gear refused to come down. Airspeed was 120 knots, flaps toggled to take off via emergency method and positive G forces applied in an attempt to get the gear down, but the starboard main remained barberpoled.

Since the No. 1 engine had overtemped on flameout, I was reluctant to restart it but it was time to sacrifice an engine. *No. 1 started and ran normally!* The No. 1 hydraulic system and No. 1 generator were normal. Landing gear was reset and extended normally with a three down and locked indication. INS and AHRs heading and attitude were regained. The APU accumulator was recharged and started normally. The windshield started clearing. An airborne S-3 from another squadron

visually inspected us at the request of the tower, and the flight finally ended in a delayed but uneventful landing with a bewildered pilot at the controls trying to figure out what had happened.

This flight has a happy ending. But consider what might have happened had it been dark outside when all electrical power was lost. It becomes very quiet and dark in the cockpit very quickly. Disorientation is an understatement. The final result might not have been so happy. Maintenance investigation revealed the following:

- A compressor inlet temperature sensor had failed allowing the No. 1 engine to roll back as the throttle was retarded to idle.
- The generator control unit of the APU had failed, preventing the emergency generator from powering the AC essential bus.
- An over-current condition existed when the EHP was started which tripped the No. 2 generator.
- Cross tie relay contactors in the No. 1 generator were pitted, fused and showed sign of excessive wear which prevented the No. 2 generator from resetting and, once reset, from powering the entire electrical load.
- A threaded bushing in the emergency landing gear flat spring was cracked which prevented full extension of the main landing gear via the emergency method.

P.S. There was not a chance to review the pocket NATOPS until all of the emergencies were taken care of. ◄

Cdr. Montgomery is commanding officer of VS 22, an S-3 air antisubmarine squadron at NAS Cecil Field, Fla.

Lt. Col. Joseph A. Mitchell, Jr., USMC (left), Capt. Raymond G. Duquette, USMC (right).

Lt. Col. Joseph A. Mitchell, Jr., USMC
Capt. Raymond G. Duquette, USMC
VMFA 212

Capt. Ray Duquette, pilot, and Lt. Col. Joe Mitchell, RIO, completed a three-plane air-to-air mission and returned to NAS Barbers Point, Hawaii, for landing. As Capt. Duquette rolled his F-4 into the groove, he rechecked his gear down and locked and noted that he was on speed at 145 KCAS and 350 feet AGL. Suddenly, he felt and heard a solid thump on the right side of the aircraft. The aircraft began to decelerate immediately and started to descend rapidly with a right yawing movement. Capt. Duquette instantly recognized the symptoms of a lost engine, advanced both throttles to maximum afterburner, and raised flaps/slats to one-half and out. As the aircraft continued to descend, he increased the angle of attack slightly from 18 to 21 units. The aircraft stopped its descent at approximately 50 feet AGL. The crew waved off, declared an emergency, turned down-wind, and secured the right engine. An uneventful single-engine approach was flown to an E-28 arrestment. Upon post-flight inspection, Lt.Col. Mitchell observed that door 126 was open in front of the right intake. The turnbuckle mechanism normally housed inside this door was missing and had been ingested by the right engine on short-final.

BRAVO ZULU

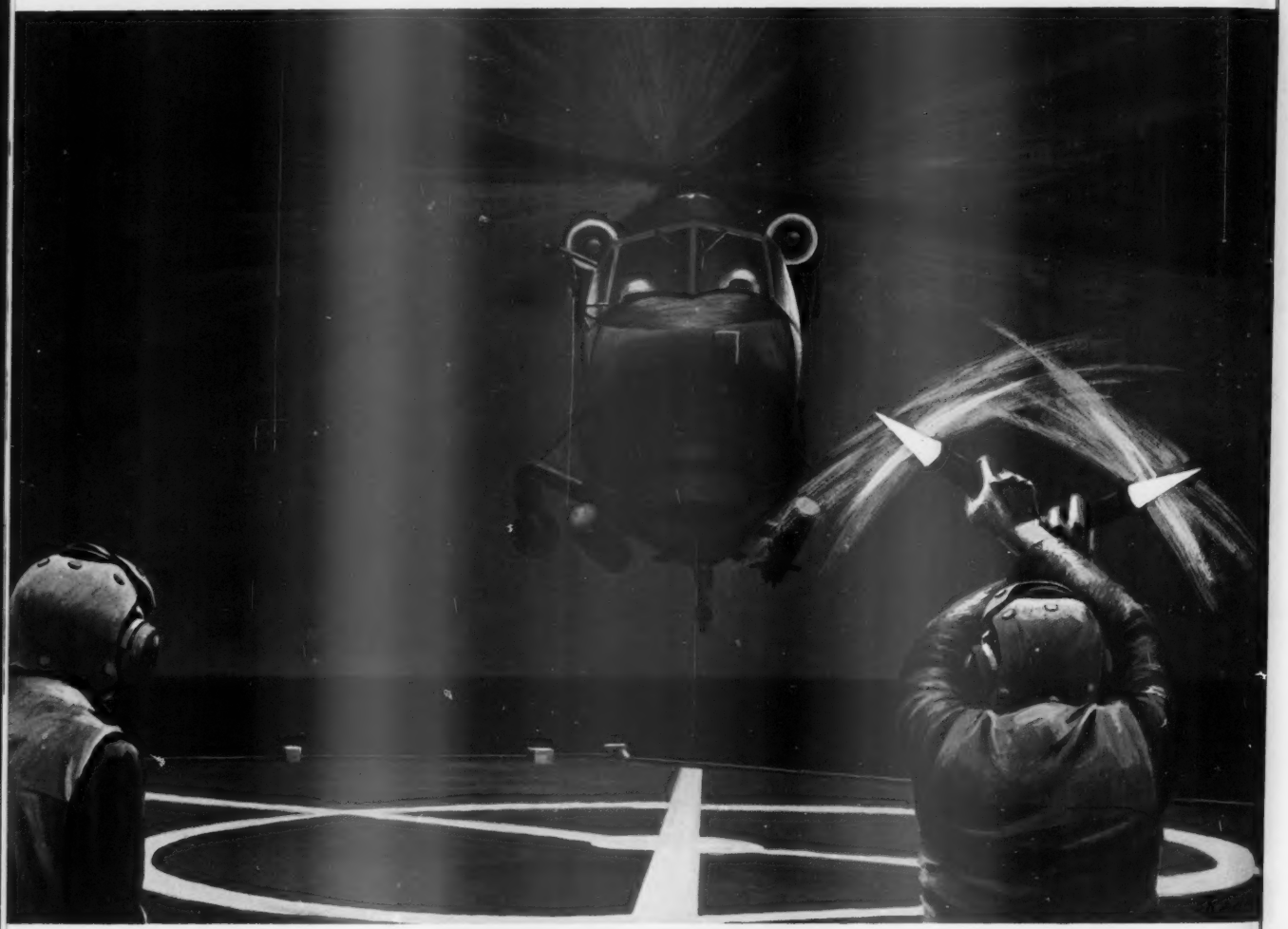
LCdr. George Mears
Lt. Phil Tinsley
VAW 123

In an environment where extraordinary operations occur on a daily basis, even a night landing in the "Hummer" becomes somewhat routine, that is until something goes wrong. Screwtop 602, piloted by Lt. Phil Tinsley, with co-pilot aircraft commander LCdr. George Mears, backed up by mission commander Lt. John Yurchak, was at six miles when the call from CATCC came to "go dirty." Lt. Tinsely lowered the gear and selected 20 degree flaps. Hearing the reassuring thud of the gear locking into place, LCdr. Mears turned his attention to observing the flaps extend. However, with the flaps indicating less than 10 degrees down, the indicator stopped moving. A quick visual inspection of the flaps by Lt. Yurchak confirmed they had moved only slightly. With the aircraft now approaching three miles, LCdr. Mears requested a climb into the bolter pattern to diagnose the problem. Once the E-2 was established at 1,200 feet, NATOPS procedures were complied with for emergency operation of the flaps, but to no avail. The flaps were stuck at approximately five degrees. With the ship operating in a true "blue water" environment, there was no question of whether or not to bring the aircraft aboard. Actual aircraft trap weight was computed and a wind over the deck requirement agreed on. While the rest of the air wing recovered, the pilots reviewed procedures for a no-flap landing with special emphasis on the 25 percent increase in net altitude loss in the event of a wave-off and longer distance required for a bolter. Fortunately, these preparations proved unnecessary. Lt. Tinsley flew a flawless OK pass to a pitching, dark deck. Post-flight inspection revealed that the failure of a control mechanism caused the flaps to jam, rendering them inoperable. There have been a number of 10-degree flaps and even a handful of no-flap CV landings by the E-2, but to our knowledge, a night, no-flap CV landing is extremely rare, and a most challenging event in the E-2 community.

Lt. Phil Tinsley (left),
LCdr. George Mears (right).

A Close Encounter —

By Lt. Matthew J. Bablitz



. . . That night the ship made contact on a "real world" submarine, and the H-2 was put on 30-minute alert. . . .

I STILL remember the pilot saying, "I've never not done a landing checklist . . . never!" We found out "never" can and will happen. The chain of events started during a four-month Indian Ocean deployment. Maintenance support problems, encountered throughout the cruise, allowed our det's pilots only minimal flight time and almost no night time. After a six-week post-cruise stand-down period, our det was re-deployed aboard the same frigate for a two-week Lant ASW SpecOP period.

On SpecOps, the det's four-month lull in flight activity abruptly ended. Often we flew three to four, 2.5-hour, actual

Helo Kind

. . . The rotor engagement and takeoff were normal, but while climbing to the briefed 3,500-foot minimum altitude, the No. 1 engine started to overspeed. . . .

ASW sorties per day. Many involved coordinated operations between two frigates, two LAMPS helicopters and a VP aircraft. It was, at best, a hectic schedule.

On the second day of the SpecOp period, our helicopter's radar altimeter system began to malfunction. The warning tone was activating for no apparent reason, usually beeping once or twice during the second half of each flight. At first we thought the problem was only stray trons, but when the problem continued, the system was griped. Maintenance troubleshooting revealed no abnormalities so the MAF was signed off, "Checks 4.0 on deck — test next flight."

During the next day's flights the problem worsened. The tone was now activating constantly above 1,000 feet and often enough below 1,000 feet to be an annoyance. Again the system was griped and again it checked good on deck. This time, however, a loose wire on a connecting cannon plug was found and repaired. The sheet was again signed off and again the tone activated without cause during the second half of each flight. The troubleshooters now suspected that a weak receiver-transmitter (RT) was causing the signal to become unreliable during flight. An RT change was in order.

Since the ship's LAMPS pack-up did not contain a spare RT, maintenance removed and inspected the faulty RT. During the inspection a bent coax prong was discovered. It was repaired and reinstalled. On-deck system checks were all good and the form was signed off for yet another in-flight test. During the following flight, the box worked as advertised. The only in-flight warning tones occurred, as they should have, when descending below the high altitude index (250 feet) with the gear up, and below the low altitude index (usually 40 feet) with the gear up. With the system now working properly, we cleared the bird for night flights.

That night the ship made contact on a "real world" submarine and our H-2 was put on 30-minute alert. About an hour after being placed on alert, the ship directed a launch. The crew quickly manned the helicopter, a bit apprehensive because of lack of recent at-sea night experience.

Rotor engagement and takeoff were normal, but while climbing to the briefed 3,500-foot minimum altitude, the No. 1 engine started to overspeed. The pilot regained RPM control by beeping the collective RPM switches down. However, as the pilot lowered the collective to descend for a precautionary landing, he noted another torque split. This time the No. 1 engine's torque needle was 15 percent below No. 2. Surmising an underspeed caused by a malfunctioning fuel control actuator, the HAC again adjusted the collective beeper switches to regain RPM control and marry torques. He then turned both engine actuators off, in accordance with current H-2 NATOPS procedures, and asked the ship for a green deck for a precautionary landing.

While waiting for a green deck the HAC asked the co-pilot to talk him down and around the landing pattern for a practice approach. The approach required considerably more coaching than usual because the crew was worried about the No. 1 engine. The co-pilot was talking almost constantly trying to keep both he and the pilot oriented in the pattern. On final the cockpit got even busier. The co-pilot was now talking constantly, giving the pilot range, altitude, glide slope and closure rate information. With all this going on, the ship called the helo telling them to land as soon as possible on the green deck. Almost simultaneously, the low altitude warning tone on the radar altimeter came on intermittantly.

The pilot quickly checked his altitude at about 200 feet at half a mile from the ship, right where he should be. The co-pilot rogered the green deck call and told the pilot they were cleared to land. Since both pilots already wanted to land as soon as possible, they continued their approach.

A minute or so later they were at 45 feet, just aft of the flight deck in a near hover. While crossing the deck edge, the pilot lowered the helicopter to 40 feet and the warning tone began beeping continuously, as the co-pilot continued talking him onto the spot. The co-pilot called "wheels in the circle" as the pilot stabilized the helicopter for landing.

They were over the spot, stable, as the pilot started to land when he noticed the landing signalman gesturing frantically. "Wave-off? . . . no . . . wheels down? Wheels down — wave-off — warning tone!" The pilot shouted. There we were, at less than 10 feet, over the spot, at night, about to land on USS *Frigate* **with the gear up!**

The co-pilot lowered the gear and the pilot landed safely. Fortunately, the LSE saw the landing gear's position. Had he not noticed, an aircraft and aircrew could have been lost.

General distractions, past and present system malfunctions, and lack of recent at-sea night experience all played a part in this story. The lesson to be learned, however, is always, always, *always,* perform the landing checklist. ◄

Lt. Bablitz is a SH-2F LAMPS pilot with HSL 36, Mayport, Fla.

Mace Meanderings

Recently, Approach tried a new method of presentation by using a selection of articles from one squadron. We hoped this would serve two ends. First, it would give an in-depth indication of how members at various levels of an aviation squadron view their jobs. It would also give an assortment of ideas and discussions from a single unit.

We're going to try it again in this issue, using submissions from the Royal Maces of VA 27. This LATWINGPAC squadron established an ambitious writing program during the last few years, which has survived three commanding officers. Each officer submits an article on a professional topic every quarter; the troops are also encouraged to write as well. Many of the articles have been printed in Approach. This unprecedented effort resulted in VA 27 becoming the first winner of the Grampaw Pettibone Award, which recognizes the greatest effort toward aviation safety awareness through communications.

Leadership: The Linchpin of Safety

By Cdr. H.D. Connell

"Each leader, whether commanding officer, crew chief or office supervisor, has it within his power to generate an outstanding safety record for his unit."

A POINT too often missed by managers of aviation safety is that the same fundamentals of leadership that produce success in operational and administrative areas will yield results in safety.

I'm not talking about safety being an inseparable part of readiness. That link should be obvious to anyone with fleet experience. What I am driving at is the method of achieving a safe operational record. No special management tools are required; no esoteric insights from postgraduate school are essential. Leadership is the key.

Each leader, whether commanding officer, crew chief or office supervisor, has it within his power to generate an outstanding safety record for his unit. He needs no specialized training to do this, no inspired strategy from a long career of safety stand-down attendance. What he must do is to set the proper climate for his unit and provide the necessary personal example.

It is the leader who sets priorities for his unit, and who determines the climate of his operations. Three philosophies are essential to the safety climate:

- Do things right.
- Insist on personal accountability.
- Make safety something of obvious value.

Doing things right is little more than a common sense distillation of what all safety programs are about. Don't let your subordinates get caught up with any other rationale for the way things get done, or for the way tasks are prioritized. Shortcuts, jury-rigs and gundecking are clearly undesirable ingredients in your safety program. If they are excluded from your general *modus operandi* by the climate you set, your people won't be tempted to adopt them by impulse or under pressure in hazardous situations.

Personal accountability must apply to both success and failure. Reward success; amend error. The plague of management is accepting "it just happened" as explana-

tion for untold events. Things rarely happen by themselves; *people cause them to happen.* Be reasonable about this, however. "Succeed or else" is not the message to instill in your team. Allow room for honest mistakes, and address them as training deficiencies. Deliberate violations of established procedure, however, must never be accepted. Hold those who refuse to conform directly accountable for their actions. Change their behavior or change their job; never just "let things happen."

Placing an obvious value on safety is also straightforward. Place only quality people in the Safety Department. Make their personal successes obvious to all hands. Give them your personal and public support, and insist others in the chain do likewise.

As important as the command climate, the leader concerned with safety must lead by personal example. Two ideas are critical here: provide a model of preparation and *never* condone an act that violates a published precaution. For aviators, preparation means demonstrating the same degree of research, organization and planning before the brief that you demand from your section leader in training, or your young mission commander striker. The example a senior aviator sets when he arrives late and obviously relies on a heavy dose of "I've been there" to get through the preflight briefing is a deadly one. Hold yourself up to the same standards of preflight preparation you insist on from your junior officers. Expect them to do not only as you say, but also as they see you do.

The leader who turns a blind eye to safety violations fosters the same attitude in his subordinates. They must be relied upon to do things properly in your absence. Don't fail them by showing an indifference to the regulations you expect them to abide by and enforce in your name. Never let it go "just this one time" — not during a QA audit, in the air nor when walking through the hangar bay. Don't just issue a ticket for these violations — the negative approach is rarely the most effective —correct the error on the spot, and explain how to do it right. If you are obviously concerned about the regulation, your subordinates will be. If their perception is that the leader isn't serious about a situation, how can they be expected to take it seriously?

It is not just superior management that produces effective safety programs, nor is it special education or a sixth sense about hazard avoidance. All these, combined with luck, are undeniably helpful, but the connecting factor in any successful undertaking is the quality of the leadership. It is leadership which initiates success in aviation safety, the basics of which must underly all other aspects if your safety program is to succeed. Good leaders and good managers in combination produce good safety records. Be one. Make it happen.

Cdr. Connell was the commanding officer of VA 27. He is now stationed in Washington, D.C., as Head, J.O. Aviation Detailing Section, NMPC.

"As important as the command climate, the leader concerned with safety must lead by personal example."

Not So Fast

By Lt. Kevin Hutcheson

"CRITICAL Action Emergencies" are just that: a handful of malfunctions that require a pilot's immediate analysis and action to avoid disaster. From the very beginning of the training command, "Know your emergency procedures **cold**" was preached over and over again. Bouncing rubber balls, reciting engine failure procedures, and having a roommate ask you an urgent procedure just as you put a full fork of dinner in your mouth — these things happen every day in primary training. Woe to the student who couldn't recite those emergencies quickly and correctly during a brief or a flight.

How about the procedures that don't fall under that "critical action" category? Does that mean they are no big deal? Of course not. You still have to be intimately familiar with them. The problem is that doing something quickly but incorrectly is sometimes worse than not doing anything at all. As a first step, some pilots include "wind your clock." That gives them a chance to really think about what problem they are facing and what to do about it.

Naval aviators are, by nature and training, aggressive and independent thinkers. However, being too aggressive and independent can sometimes get you in trouble. For example, a CV/CVN was operating "blue water" with no divert within easy reach. An A-7 entered the break, then had an unsafe nose gear with all the corresponding flashing lights and barberpoles. This problem, uncorrected, would result in a barricade arrestment. The pilot immediately informed the Air Boss what the problem was, what his indications were and asked for a squadron representative. The A-7 pilot climbed overhead, took some gas from the recovery tanker and looked through the NATOPS pocket checklist to review all applicable procedures. Meanwhile, his squadronmate on the ship also looked through the NATOPS manual for more complete information and consulted the ready room for additional expertise. A visual check showed that indeed the nose gear doors were opened, but the nose gear itself was still in the wheel well, and appeared to be cocked to one side. The pilot was going to try G-loading the aircraft to get the gear down when one of the warrant officers in maintenance control remembered something about the hook and nose gear steering possibly causing a failure of this type. A closer look at the NATOPS manual revealed a seldom used and little-known procedure that wasn't in the more commonly used landing gear malfunction section. In fact, it wasn't anywhere in the NATOPS pocket checklist that the pilot had in the aircraft. It addressed a possibility that if the hook was lowered prior to the landing gear (standard CV procedure is to enter the break with the hook down) and a certain electrical malfunction in the nose gear steering wiring occurred, there was a small possibility that the nose gear would cock in the wheel well and not come out, even with 3,000 pounds of hydraulic pressure urging it. I said "little-known" because none of the A-7 aviators in either squadron aboard had ever heard of it happening before. The procedure called for raising the gear (opposite the general principle of leaving what you have down so as not to end up with less than that with which you started), then raising the hook, and lowering the gear again with the hook up.

Fortunately, that was the problem, and the corrective action resulted in a three-down and locked condition, accompanied by a big hydraulic leak caused by 3,000 pounds of pressure against a jammed strut assembly.

By using all available information and asking for advice, the problem was properly corrected. Had the pilot followed an independent line of thought and done something he thought might correct his problem right away so he could land, he might have rushed into something as foolish as trying the emergency extension of the landing gear. This would have been an irrevocable mistake, forcing him into a barricade arrestment or divert with a chance of serious aircraft damage. That same speedy mistake could also cost him his life.

In most cases, acting quickly on an unrehearsed procedure will probably result in skipping a step or doing the steps out of their correct sequence. These unrehearsed procedures don't need a *speedy* reply; they need a *correct* reply. Relax first, think next, ask for help if available . . . then act correctly.

Lt. Hutcheson graduated from the University of Rochester. He is the NATOPS officer and LSO for VA 27.

Coming Home

By Lt. Frank Hill

EVERYONE is always eager to take that cross-country or weekend trip, just to get away from it all. The problem is that eventually you need to come home. For a lot of pilots there seems to be more pressure on getting home at a certain time than there was leaving to keep a date. This is where the pilot suddenly transforms himself into a "can do" monster. He can handle anything, anytime, anywhere.

That's the time to remember this phrase: "a man must also know his limitations." Great! That's a good start, but only part of it. A man must also know the limitations of his equipment. Man does not fly alone. He has to have an airplane, and that airplane can only do so much. A pilot's capability to handle any given situation, especially weather, is largely dependent upon his machine.

Know your overall capability and make a professional decision as to the proper course to take. If that means you will be late for an appointment or work, then be late!

Two experienced pilots rent an airplane for the weekend to fly to a mountain resort, just to get away for awhile. Joining them are two passengers with no flying experience. They are totally dependent upon the decisions of the pilots in the front seat. The pilots are each highly trained in single-seat tactical jet, carrier operations. This trip, they are tackling a potentially wilder animal — a four-seat, fixed-gear, propeller-driven light airplane. So far as the equipment goes, it is far less complicated, but there are many deadly situations into which you could easily put yourself (and others).

Being professional and realizing they are at a slight disadvantage with this equipment, they take painstaking precautions and plan for all possible developments. The weekend goes well and the day arrives to return home. A quick check of the weather shows "30 degrees and snowing," something that wasn't even close to the forecast. This can't be! Yesterday it was 75 degrees without a cloud in the sky.

The group heads to the airport all packed and ready for adventure, hoping it's not as bad as it looks. Incoming commuter pilots confirm the weather picture. Cloud tops at 16,000 feet, severe turbulence and heavy icing. No gut-wrenching decision process necessary here; that's a definite no-go situation.

The weatherman swears it will be clear by evening. That's not too hard to handle, just another day in paradise. Along comes the evening and the weather remains the same. Now it really looks as if there is no chance to be back in time. Not a whole lot can be done. There is no way this airplane will make it. All through the next day, the same pilot reports show 12,000 to 14,000 foot tops, traces of icing and light turbulence. Early evening arrives. What the pilots had hoped for — disappearance of the clouds — never happens. Back to decision time. One day of work has already been missed with another in jeopardy.

Pros and cons: the pilots are all-weather qualified; the airplane is IFR-equipped, but has a slow climb rate and service ceiling of around 11,000 feet; the route of flight will be in clouds and long enough to cause significant problems if icing is present.

Solution: go for it, but only if a way to back out is planned and easily available once airborne. The plan is to find a place to commence a circling climb to an altitude that clears you of all obstacles en route. If you don't like the situation — perhaps icing is severe — descend and return. The climb area is easy; there is a big lake. Big enough to absorb any minor navigational errors that may happen after cloud entry, and the mountains are far enough away to where you feel secure.

The group took off with permission to try their unusual departure procedure. They reached the climb point and entered the clouds at 2,000 feet AGL in a circling climb. Pilot No. 1 flew the airplane; pilot No. 2 monitored the instruments, talked on the radio and watched for ice formation. The climb seemed to take forever, but only a trace of ice appeared on the wings. Once established en route, the group was in the clouds for only a few minutes. The clouds and light ice soon disappeared and a beautiful sunset appeared above their destination on the horizon. Happy ending!

The bottom line is that each man must know his own limitations and the limitations of his equipment. Every decision requires its own special solution. Weigh all the inputs and put heavy emphasis on the ones that will keep you alive.

Lt. Hill is the schedules officer for VA 27. He graduated from Louisiana Tech.

Safety As I See It

By AMSC John Cundiff

"Safety. Oh, brother!" That was the first response that went through my mind when I was reassigned as the squadron safety chief petty officer. I started reflecting back on my past performance. The times I probably should have kept my big mouth shut and didn't. Refusing to go with the status-quo, yeah, that was my norm, but that attitude was what got me those 4.0 evaluations, commendations and finally chief. I thought for sure I had fallen victim to the "can do" spirit that had been instilled in me by previous commanders, maintenance officers and master chiefs. I was right. Safety is what you make it. You have to be a dedicated individual in any job assignment to make it pay off for everyone. I've found through this experience that the attitude of most commands is that safety is fine, so long as it doesn't interfere with what the maintenance department and aircrew have already decided to do. If you are not a strong-willed individual, you probably won't accomplish a thing! People will go on getting injured, and the command will continue on the same path that usually ends up in a catastrophic mishap, loss of equipment, or loss of life. If you safety officers, chief petty officers and petty officers are worried about making waves or getting adverse fitness reports or evaluations, then ask to be relieved or transferred to another department. Safety is a constant battle at all levels, from the junior airman who hates to wear that cranial through the squadron skipper who forgets to lower his visor on the flight deck with turning aircraft all around him, to the admiral who wants to jog that last lap on the flight deck even though the Air Boss has called away aircraft starts. Usually, all that is needed is a tactful reminder. If that doesn't work then throw caution to the wind. When an individual's safety is concerned, we, as members of the safety department, must put the personal welfare of others above our own personal ambitions. Are you setting the example? Are you receptive to reminders concerning your own personal safety? Have you taken the time to ask the maintenance technician if he knows where his cranial is? If the answer to any of these questions is "maybe," then it is time to re-evaluate your own safety program. Remember, safety is everyone's business.

AMSC Cundiff was the squadron safety CPO when he wrote this article. He has since joined HS 6.

How Soon We Forget . . .

By Airman Alexander Heberling

While conducting OJT on the flight deck, an airman went to the catwalk to apply power to a bird.

After power came on, he started to climb the ladder back to the flight deck but forgot that the tail was hanging over the catwalk. The result was the painful contact of his nose against the trailing edge of the universal horizontal tail.

While wiping the blood off his nose, he again didn't pay attention to where he was walking. The result was another painful contact, as he smacked his head against the trailing edge of a wing flap.

Overall result: he spent his first day back from TAD learning a painful lesson about how people should never underestimate the hazards of the flight deck.

I should know because this person is *me!*

Airman Heberling is an A-7E plane captain with VA 27 and a native of New York City.

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SEATBELTS WORK

Do you know where yours are?

Poster idea contributed by AD1 Ronald Johnson, VA-147.

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